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| L Number | Hits | Search Text | DB | Time stamp |
|---|---|---|---|---|
| 1 | 4 | fish adj waste and antioxidant and (ferment$5 or silag$5) | USPAT; US-PGPUB | 2003/09/09 12:54 |
| 2 | 0 | fish adj waste and antioxidant and (ferment$5 or silag$5) | EPO; JPO; DERWENT | 2003/09/09 12:54 |
| 3 | 0 | fish adj waste and antioxidant and (ferment$5 or silag$5) | USOCR | 2003/09/09 12:55 |
| 4 | 4 | (silag$5 or ensil$7) and (BHA or BHT or TBHQ) | USOCR | 2003/09/09 12:56 |
| 5 | 2 | (silag$5 or ensil$7) and (BHA or BHT or TBHQ) | EPO; JPO; DERWENT | 2003/09/09 12:57 |
| 6 | 36 | (silag$5 or ensil$7) and (BHA or BHT or TBHQ) | USPAT; US-PGPUB | 2003/09/09 13:01 |
| 7 | 51 | (silag$5 or ensil$7) and (gallate or tocopherol) | USPAT; US-PGPUB | 2003/09/09 13:00 |
| 8 | 9273 | (BHA or BHT or TBHQ or gallate or tocopherol) and (formic or propionic or acetic) | USPAT; US-PGPUB | 2003/09/09 13:03 |
| 9 | 661 | ((BHA or BHT or TBHQ or gallate or tocopherol) and (formic or propionic or acetic) ) and 426/$.ccls. | USPAT; US-PGPUB | 2003/09/09 13:11 |
| 10 | 875 | (BHA or BHT or TBHQ or gallate or tocopherol) same (formic or propionic or acetic) | USPAT; US-PGPUB | 2003/09/09 13:08 |
| 11 | 65 | ((BHA or BHT or TBHQ or gallate or tocopherol) same (formic or propionic or acetic) ) and 426/$.ccls. | USPAT; US-PGPUB | 2003/09/09 13:04 |
| 12 | 280 | (BHA or BHT or TBHQ or gallate or tocopherol) same (formic or propionic or acetic) | USOCR | 2003/09/09 13:13 |
| 13 | 29 | ((BHA or BHT or TBHQ or gallate or tocopherol) same (formic or propionic or acetic) ) and fish | USOCR | 2003/09/09 13:08 |
| 14 | 738 | ((BHA or BHT or TBHQ or gallate or tocopherol) and (formic or propionic or acetic) ) and (silag$5 or ensil$7 or fermentation) | USPAT; US-PGPUB | 2003/09/09 13:11 |
| 15 | 117 | (((BHA or BHT or TBHQ or gallate or tocopherol) and (formic or propionic or acetic) ) and (silag$5 or ensil$7 or fermentation)) and 426/$.ccls. | USPAT; US-PGPUB | 2003/09/09 13:12 |
| 16 | 8 | (BHA or BHT or TBHQ or gallate or tocopherol) same (formic or propionic or acetic) same (silag$5 or ensil$7 or ferment$7) | USOCR | 2003/09/09 13:14 |
| 17 | 2 | (BHA or BHT or TBHQ or gallate or tocopherol) same (formic or propionic or acetic) same (silag$5 or ensil$7 or ferment$7) | EPO; JPO; DERWENT | 2003/09/09 13:15 |
| 18 | 15 | (BHA or BHT or TBHQ or gallate or tocopherol) same (formic or propionic or acetic) same (silag$5 or ensil$7 or ferment$7) | USPAT; US-PGPUB | 2003/09/09 13:18 |
| 19 | 65 | (BHA or BHT or TBHQ or gallate or tocopherol) same (formic or propionic or acetic) and 426/$.ccls. | USPAT; US-PGPUB | 2003/09/09 13:20 |
| 20 | 29 | fish same (waste or ensilage or silage) and antioxidant and preservative | USPAT; US-PGPUB | 2003/09/09 13:33 |
| 21 | 54 | fish same (waste or ensilage or silage) and antioxidant and (formic or propionic or acetic) | USPAT; US-PGPUB | 2003/09/09 13:43 |
| 22 | 1 | fish same (waste or ensilage or silage) and antioxidant and (formic or propionic or acetic) | EPO; JPO; DERWENT | 2003/09/09 13:46 |
| 23 | 21 | fish same (waste or ensilage or silage) and antioxidant and (formic or propionic or acetic) | USOCR | 2003/09/09 14:46 |
| 24 | 1 | 3284212.pn. | USOCR | 2003/09/09 14:46 |

=> d 1-2

L3 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1986:128610 CAPLUS
DN 104:128610
TI **Silage** from tropical fish. 3. Lipid behavior
AU Hall, G. M.; Ledward, D. A.
CS Dep. Appl. Biochem. Food Sci., Sch. Agric., Sutton Bonington/Leics., LE12 5RD, UK
SO Journal of Food Technology (1986), 21(1), 45-54
CODEN: JFOTAP; ISSN: 0022-1163
DT Journal
LA English

L3 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1967:27859 CAPLUS
DN 66:27859
TI Food preservative comprising enzymes and antioxidants
IN Tribble, Talmadge B.; Rondenet, Eugene L.
PA Flavor Corp. of America
SO U.S., 5 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI US 3284212 | | 19661108 | US | 19630306 |

=> d all

L3 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1986:128610 CAPLUS
DN 104:128610
TI **Silage** from tropical fish. 3. Lipid behavior
AU Hall, G. M.; Ledward, D. A.
CS Dep. Appl. Biochem. Food Sci., Sch. Agric., Sutton Bonington/Leics., LE12 5RD, UK
SO Journal of Food Technology (1986), 21(1), 45-54
CODEN: JFOTAP; ISSN: 0022-1163
DT Journal
LA English
CC 17-12 (Food and Feed Chemistry)
AB Acid **silages** were prepd. from silverbelly (Leiognathus) at 30.degree. with 3% of 98% HCO2H. Lipid oxidn. takes place actively during ensiling as demonstrated by changes in fatty acid compn., thiobarbituric acid value and peroxide value. Lipid extn., with CHCl3-MeOH or iso-PrOH, or the addn. of an antioxidant before ensiling can limit the build up of lipid oxidn. products. Lipid extn. also suppresses the autolysis of proteins in a defatted **silage** compared with a normal **silage** when measured by total sol. N or sol. nonprotein N. The solubilization of collagen appears to be unaffected by lipid extn. perhaps reflecting the nonenzymic nature of this process. The limited autolysis in defatted **silages** may be beneficial in restricting the release of free amino acids capable of reacting with lipid oxidn. products resulting in a lower nutritional value for **silage** based diets.
ST fish **silage** lipid oxidn
IT Fatty acids, biological studies
RL: BIOL (Biological study)
(of fish **silage**, **BHA** effect on)
IT Proteins
RL: BIOL (Biological study)

(of fish **silage**, lipids effect on stability of)

IT Lipids, biological studies
RL: BIOL (Biological study)
(of silverbelly fish **silage**, quality and protein hydrolysis in relation to)

IT Fish
Leiognathus (fish)
(**silage** from, lipid behavior in, quality and protein hydrolysis in relation to)

IT **Silage**
(fish, silverbelly, lipid behavior in, quality and protein hydrolysis in relation to)

IT 25013-16-5
RL: BIOL (Biological study)
(fish **silage** lipids and quality response to)

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=> file food
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|---|---|---|
| | 0.21 | 0.21 |

FULL ESTIMATED COST

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For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s fish waste and antioxidant and (ferment######## or silag########)
L1 10 FISH WASTE AND ANTIOXIDANT AND (FERMENT######## OR SILAG########
)

=> dup rem l1
DUPLICATE IS NOT AVAILABLE IN 'FEDRIP, FOREGE, MEDICONF, NUTRACEUT'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L1
L2 8 DUP REM L1 (2 DUPLICATES REMOVED)

=> d 1-8 bib ab

L2 ANSWER 1 OF 8 PROMT COPYRIGHT 2003 Gale Group on STN

AN 2002:467781 PROMT
TI Chemical tradenames. (F-P).(list of chemical companies throughout the world with contact data)(Industry Overview)(Cover Story)
SO Chemical Week, (27 Sep 2002) Vol. 164, No. 38, pp. 486(12).
ISSN: ISSN: 0009-272X.
PB Chemical Week Associates
DT Newsletter
LA English
WC 18020
*FULL TEXT IS AVAILABLE IN THE ALL FORMAT*
AB F-1000, 2000, 2100, 2200, 2300, 3600, 4400: Aluminum hydroxide dried gel -- Reheis Inc
THIS IS THE FULL TEXT: COPYRIGHT 2002 Chemical Week Associates

Subscription: $99.00 per year. Published weekly. P.O. Box 7721, Riverton, NJ 08077-9021.

L2 ANSWER 2 OF 8 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 1
AN 2002:239527 BIOSIS
DN PREV200200239527
TI [Preparation and effects of fish **silage** in pig diet.
Original Title: Pripremanje i efekti upotrebe riblje silaze u ishrani svinja..
AU Jokic, Z. (1); Dordevic, N. (1)
CS (1) Katedra za fiziologiju i ishranu domacih zivotinja, Poljoprivredni Fakultet, Beograd Yugoslavia
SO Veterinarski Glasnik, (2001) Vol. 55, No. 3-4, pp. 117-124. print.
ISSN: 0350-2457.
DT General Review
LA Serbo-Croatian
AB The authors used data in literature to present different possibilities for processing fish and **fish waste** into **silage**,
and its subsequent effects in pig diet. The main problems that occur in this procedure are proteolytic processes and oxidation of lipids. The use of chemical preservatives enables a rapid lowering of the pH value, and thus also the biggest possible limiting of the **fermenting**
proteolytic activities. Formaldehyde is very important in this respect, because of its neutral effect, but it has a negative effect on digestibility. The problem of lipid oxidation is resolved by using synthetic and nautral **antioxidants**. In spite of a possible

negative effect on consumption and the appearance of soft yellow fat, fish **silage** of good quality can make up a significant part of the meal and present a source of animal proteins for pigs.

L2 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1997:307555 CAPLUS
DN 126:276661
TI Feed additive manufacture
IN Kawakami, Kenichi
PA Nippon Seibutsu Sangyo Kk, Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | JP 09056337 | A2 | 19970304 | JP 1995-210758 | 19950818 |
| | JP 2890177 | B2 | 19990510 | | |
| PRAI | JP 1995-210758 | | 19950818 | | |

AB Feed additive is manufd. from shrimp and/or **fish waste** , fish meal, rice bran, and mixed culture of microorganisms by mixing, **fermn**. and drying with hot air, and again mixed with **antioxidant**.

L2 ANSWER 4 OF 8 CABA COPYRIGHT 2003 CABI on STN DUPLICATE 2
AN 93:82204 CABA
DN 931461803
TI Omega-3 fatty acids in pig nutrition - a review
Omega-3 vetzuren in de varkensvoeding - literatuurstudie
AU Oeckel, M. J. van; Boucque, C. V.
CS Centrum voor Landbouwkundig Onderzoek - Gent, Rijkstation voor Veevoeding, Studiecentrum Varkenshouderij, Scheldeweg 68, 9090 Melle-Gontrode, Belgium.
SO Revue de l'Agriculture, (1992) Vol. 45, No. 6, pp. 1177-1192. 60 ref.
ISSN: 0776-2143
DT Journal
LA Dutch
SL French; English
AB To cater for consumer preferences towards food containing polyunsaturated rather than saturated fatty acids, the possibility of incorporating omega -3 fatty acids in muscle and fatty tissue of pigs is reviewed with reference to performance, health and carcass, meat and fat qualities. Results indicate that the fatty acid composition of muscle and adipose tissue of monogastrics is easy to manipulate by changing the fat source in the diet but there are some restrictions. A too high incorporation of polyunsaturated omega -3 fatty acids in adipose tissue generally leads to softer less consistent fat and increased risk of oxidation, with worse keeping qualities as a result. The maximum level of polyunsaturated fatty acids in backfat may be about 12%. The upper limit of polyunsaturated fatty acids in backfat of a carcass used for bacon and raw sausages may be 15%, in order to maintain technologically acceptable qualities of the fat. Because of the high correlation between fatty acid composition of pig tissues and dietary fat, concentration of polyunsaturated fatty acids in the diet has to be limited to meet the above-mentioned norms. A limit of polyunsaturated fatty acids 12 g/kg dry feed may not be exceeded to ensure good fat characteristics. Other results indicate that a pig diet should not contain fish meal more than 100 to 125 g (with plus or minus 2% fat) or the equivalent (on protein basis) of fish **silage** 250 to 300 g daily, to avoid poor fat and meat characteristics. Fish oil influences growth rate. To obtain normal feed intake and growth it is advisable to limit fish oil in the ration to a maximum of 5%. Besides restrictions on fish oil concentration in the diet, problems may also be reduced by withdrawing fish oil from the diet a few weeks before slaughter. When fish

oil and **fish waste** are used in pig diets it is also necessary to consider their stability. Choice of preparation and storage of feeds may minimize risk of oxidation and as a consequence increase storage life. Use of **antioxidants**, ensilage of **fish waste** and storage at low temperatures in nitrogen atmosphere are factors which allow the use of fish oil in pig feeding. Thus increased incorporation of omega -3 fatty acids in tissues of pigs will contribute to a more favourable fatty acid balance in human diets.

L2 ANSWER 5 OF 8 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN 1987:378746 BIOSIS
DN BA84:65243
TI USE OF WASTE GROWN TILAPIA **SILAGE** AS FEED FOR CLARIAS-BATRACHUS L.
AU WEE K L; KERDCHUEN N; EDWARDS P
CS DIV. AGRIC. AND FOOD ENG., ASIAN INST. TECHNOL., P.O. BOX 2754, BANGKOK, THAILAND.
SO J AQUACULT TROP, (1986 (RECD 1987)) 1 (2), 127-138.
CODEN: JATRED.
FS BA; OLD
LA English
AB A preliminary experiment to determine the feasibility of using waste grown tilapia (Oreochromis niloticus L.) **silage** as feed for the walking catfish (Clarias batrachus L.) is described. Tilapia **silages** prepared by addition of acid or by bacterial **fermentation** with and without the **antioxidant**, butylated hydroxytoluene (BHT), were stored for 12 weeks and their nutitional and storage characteristics studied. The proximate composition of the **silages** did not change with storage. **Silages** were incorporated with a basal mixture to formulate feeds containing 30% crude protein which were fed to walking catfish. A commercial pellet was used as a control. There were no significant ($P < 0.05$) differences in daily weight gain, percentage weight gain, specific growth rate and food conversion ratio of fish fed any of the diets. The acceptability of tilapia **silage** as an ingredient in catfish feed as shown in this study presents an alternative to fish meal in utilizing **fish waste**, trash fish or low value fish.

L2 ANSWER 6 OF 8 PROMT COPYRIGHT 2003 Gale Group on STN

AN 85:16166 PROMT
TI Fish **silage** feed Norway salmon.
SO FISH FARMING INTERNATIONAL, (Oct 1984) pp. 3.
LA English
AB Helland Mek Verksted (Norway) has developed a new economic salmon-feeding process, involving the conversion of **fish waste** into acid-preserved **silage** which is mixed with a binder and made into soft pellets. The government research station at Ekkilsoey and Tromsoe U have been studying **silage** feeds for aquaculture for 2 year. Fish **silage** can be stored in silos for several months if an **antioxidant** is used and pH in organic acids kept at 4-4.5. **Silage** can be mixed and extruded to soft pellets in minutes providing low-cost feed.

L2 ANSWER 7 OF 8 FROSTI COPYRIGHT 2003 LFRA on STN
AN 64529 FROSTI
TI Recovery of high quality oil from mackerel and sprat by the **silage** process.
AU Reece P.
SO Journal of the Science of Food and Agriculture, 1981, 32 (6), 531-8 (14 ref.)
DT Journal
LA English
SL English

AB Fish oil may be recovered from whole oily fish and oil **fish waste** by ensiling under acid conditions using proteolytic enzymes. Release of free fatty acids (FFA) during the fish liquefaction was found to be due to protein breakdown and the release of bound FFA present in fish prior to ensiling. Addition of 2% 20 vol hydrogen peroxide reduced final FFA in oil. Pigmentation of **silage** oil was found to be caused by haemin, an acid hydrolysis product of haemoglobin, which could effectively be discoloured by hydrogen peroxide.

L2 ANSWER 8 OF 8 CABA COPYRIGHT 2003 CABI on STN
AN 77:66606 CABA
DN 761443346
TI Ensiling fresh animal feedingstuffs for mink
Ensilering av farskt animaliskt foder till mink
AU Johansson, A. H.
CS Lantbrukshogskolan, Uppsala, Sweden.
SO Vara Palsdjur, (1976) Vol. 47, No. 4; 5/6, pp. 106...109; 132-134. 7 ref.
ISSN: 0042-2703
DT Journal
LA Swedish
AB Of the several methods used to ensile feedingstuffs the commonest is with acid. Growth of bacteria is inhibited at pH about 4, but moulds continue to grow to a pH of between 1 and 2. Another common method is by addition of sodium bisulphite, but it is not recommended for feed for mink, because it involves destruction and consequent deficiency of thiamin. The third common method is to ensile with added carbohydrate, which aims at production of lactic acid, but, if air is not excluded, may produce acetic and butyric acid instead. Conservation of feedingstuffs for mink means conservation of feedingstuffs of animal origin and may be by addition of molasses or a cereal meal with a 'starter' of the desired bacteria. In Finland molassed beet slices or cereal meals are used; they give **silage** of a firm consistency. In Denmark acid, sulphuric, formic or hydrochloric, had been used successfully. Addition of an **antioxidant** prevents rancidity of the fat. The results of feeding trials are discussed. The most important raw material for mink is **fish waste**; poultry waste is used also. Cold storage is good, but expensive. Acid conservation inhibits the destructive enzyme thiaminase and is held by some to improve digestibility of carbohydrate. Quality of **silage** is judged from chemical and bacteriological analysis. Total volatile N and free fatty acids measure the breakdown of protein and fat; good **silage** should have a peroxide value near zero. Containers suitable for use with small amounts of **silage** are old oil barrels lined with plastic bags, but they are difficult to keep clean. Plastic containers are simpler in use, but possibly too expensive. Costs of setting up and maintaining a cold storage system and of ensiling are estimated. Finally the digestibility of carbohydrate in **silage** and the effect of ensiling on the 'concentration', DM content, of feed are discussed.

AN 85:16166 PROMT
TI **Fish silage** feed Norway salmon.
SO FISH FARMING INTERNATIONAL, (Oct 1984) pp. 3.
LA English
AB Helland Mek Verksted (Norway) has developed a new economic salmon-feeding process, involving the conversion of fish waste into acid-preserved silage which is mixed with a binder and made into soft pellets. The government research station at Ekkilsoey and Tromsoe U have been studying silage feeds for aquaculture for 2 year. **Fish silage** can be stored in silos for several months if an **antioxidant** is used and pH in organic acids kept at 4-4.5. Silage can be mixed and extruded to soft pellets in minutes providing low-cost feed.

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L2 ANSWER 18 OF 28 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 10
AN 1985:222242 BIOSIS
DN BA79:2238
TI **FISH SILAGE** AS A DIETARY INGREDIENT FOR SALMON
SALMO-SALAR 2. PRELIMINARY GROWTH FINDINGS AND NUTRITIONAL PATHOLOGY.
AU JACKSON A J; KERR A K; BULLOCK A M
CS DUNSTAFFNAGE MARINE RESEARCH LAB., P.O. BOX 3, OBAN, ARGYLL, GREAT BRITAIN.
SO AQUACULTURE, (1984) 40 (4), 283-292.
CODEN: AQCLAL. ISSN: 0044-8486.
FS BA; OLD
LA English
AB Sprat silage with and without the **antioxidant** ethoxyquin [E] was stored at 10.degree. and 20.degree. C for 8 wk to produce 4 silages of different quality (10, 10+E, 20 and 20+E). The lipid in the silages without E contained high levels of hydroperoxides and secondary breakdown products. The silages were mixed 1:1 with a binder meal and fed to salmon (mean wt 425 g) held in seawater cages. A commercial dry pellet was used for comparison. The 5 diets were fed for 16 wk when the water temperature increased from 5.4.degree. to 12.8.degree. C. Growth, food consumption and food conversion ratios were calculated. There were no significant differences in the final weights of the fish fed any diet, although the commercial diet was consumed least and gave the slowest growth rate while the water temperature was < 10.degree. C. The most rancid silage (20) proved to be very palatable and produced the most rapid growth during the early part of the trial although growth was reduced latterly. At the end of the trial histological examination of 21 tissues from 4 fish in each group showed few differences. The fish fed the silages without E showed consistent changes in the morphological appearance and distribution of the eosinophilic granule cells. The nature and possible reasons for these changes were discussed.

L2 ANSWER 19 OF 28 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 11
AN 1984:313783 BIOSIS
DN BA78:50263
TI **FISH SILAGE** AS A DIETARY INGREDIENT FOR SALMON 1.
NUTRITIONAL AND STORAGE CHARACTERISTICS.
AU JACKSON A J; KERR A K; COWEY C B
CS DUNSTAFFNAGE MAR. RES. LAB., P.O. BOX 3, OBAN, ARGYLL.
SO AQUACULTURE, (1984) 38 (3), 211-220.
CODEN: AQCLAL. ISSN: 0044-8486.
FS BA; OLD
LA English
AB **Fish silage** was produced from freshly caught sprats by the addition of 3% acid. The effects of temperature and the presence or absence of a lipid **antioxidant** (ethoxyquin) on various parameters were examined. The essential amino acids appeared to be stable under the various conditions, except tryptophan which proved to be labile,

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with the maximum loss (60%) occurring after 24 wk at the highest temperature regime. The lipid fractions of the silages without ethoxyquin, rapidly developed hydroperoxides and secondary breakdown products as measured by the anisidine value. The peroxide value was highest (190 meq/kg) in the silage stored at 10.degree. C; the anisidine value was highest (86.9) in the silage stored at 20.degree. C. No detectable loss in the level of polyunsaturated fatty acids was noted after 8 wk despite high peroxide and anisidine values, but by 24 wk there was evidence of considerable fatty acid oxidation. Ethoxyquin proved to be a very effective **antioxidant** with both the peroxide values and the anisidine values remaining low even after 24 wk storage. The results are discussed in relation to incorporating the silages into moist salmon diets.

L2 ANSWER 20 OF 28 FROSTI COPYRIGHT 2003 LFRA on STN
AN 97995 FROSTI
TI Fish handling, preservation and processing in the tropics, Part 2.
AU Clucas I.J.
SO London: TPI, 144pp. Price 4.05 pounds. TPI G, 1982
ISBN: 0-85954-126-6
DT Book

L2 ANSWER 21 OF 28 FROSTI COPYRIGHT 2003 LFRA on STN
AN 92841 FROSTI
TI Introduction to fishery by-products.
AU Windsor M.; Barlow S.
SO Farnham: Fishing News Books Ltd., 187pp. Price 13.50 pounds., 1981
ISBN: 0-85238-115-8
DT Book

L2 ANSWER 22 OF 28 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 12
AN 1981:286115 BIOSIS
DN BA72:71099
TI RECOVERY OF HIGH QUALITY OIL FROM MACKEREL SCOMBER-SCOMBRUS AND SPRAT SPRATTUS-SPRATTUS BY THE SILAGE PROCESS.
AU REECE P
CS MINISTRY OF AGRICULTURE, FISHERIES AND FOOD, HUMBER LAB., WASSAND STREET, HULL HU3 4AR.
SO J SCI FOOD AGRIC, (1981) 32 (6), 531-538.
CODEN: JSFAAE. ISSN: 0022-5142.
FS BA; OLD
LA English
AB Increases in the free fatty acid (FFA) content of oil from oily **fish silage**, recovered by centrifugation, are principally associated with the release of FFA from solid material during liquefaction of the fish. Much of the initial FFA is present in the digestive tract of the fish prior to acidification. Pigmentation of the oil during ensiling is shown to be caused by the release of the acid hydrolysis product of Hb hemin. A 2% addition of 20 volume hydrogen peroxide inhibits oil pigmentation and reduces the FFA content in the recovered oil. Peroxide values of the oil, reduced by this treatment, can be further reduced by the addition of an oil-soluble **antioxidant** to the silage. [This process produces a stable liquid product suitable for animal food.]

L2 ANSWER 24 OF 28 CABA COPYRIGHT 2003 CABI on STN
AN 80:76234 CABA
DN 801404953
TI Boiled **fish silage** as a feed for mink
Kokt fiskensilage som foder till mink
AU Tauson, A. H.; Alden, E.
CS Sveriges Lantbruksuniv., Uppsala, Sweden.
SO Var Palsdjur, (1979) Vol. 50, No. 4, pp. 119...125. 3 ref.
DT Journal
LA Swedish
AB NorSeaMink (containing cod silage plus 4% fishmeal), Nutridan TA 100 (containing cod silage plus 4% soya bean oilmeal) and heat-treated herring silage were considered suitable as fodder for mink. However, the hygienic quality of herring silage, which had a high fat content deteriorated fairly rapidly, and addition of an **antioxidant** was necessary after filleting. Also, the pH of **fish silage**, often 5.3 to 5.4 required neutralization with calcium hydroxide if below pH 5.5; the neutralization should be carefully controlled. The maximum percentage of **fish silage** in fodder for mink should be varied from 7% in July to 20% between 16 August and pelting. Fodder of low pH should not be supplied to breeding animals. Addition of finely ground soya bean oilmeal improved the properties of **fish silage**.

L2 ANSWER 25 OF 28 CABA COPYRIGHT 2003 CABI on STN
AN 80:80925 CABA
DN 791491637
TI Acid preservation of fish
Syrekonservering av forfisk
AU Austreng, E.; Andersen, A. E.; Skrede, A.
CS Inst. fjoerfe og pelsdyr, Norges Landbrukshoegskole, 1432 As-NLH, Norway.
SO Norsk Fiskeoppdrett, (1979) Vol. 4, No. 1, pp. 4-7. 6 ref.
Secondary Source: Scientifur (1979) 3 (3) 40-41
DT Journal
LA Norwegian
SL English
AB The stability of ground fish was studied with 30 different combinations of acids, 5 with mixtures of 95% fish and 5% dried sugar beet slices. The acids were sulphuric, acetic, and formic. All mixtures had sorbic acid **antioxidant** added. Except with beet slices all the mixtures became liquid in a few days, fastest with the smallest amount of acid. The beet slices gave less liquid and a grainy consistency. All the silages with formic acid were stable for 11 months. $H_2SO_4$ plus acetic acid was effective at concentrations of 2.5 and 0.5% or 2 and 1%, respectively, and 2.5% $H_2SO_4$ alone also was satisfactory. For frozen and thawed fish 3% $H_2SO_4$ with 0.5% acetic acid was necessary for acceptable stability

L2 ANSWER 26 OF 28 CABA COPYRIGHT 2003 CABI on STN
AN 76:72530 CABA
DN 751433903
TI Production and use of **fish silage** especially for mink
Fremstilling og anvendelse af fiskeensilage specielt til mink
AU Jensen, P. M.; Joergensen, G.
SO Beretning fra Statens Husdyrbrugs Forsoeg, (1975) No. 427, pp. 79.
Price: 10.00 kr.
DT Miscellaneous
LA Danish
SL English
AB Literature on preserving fish as feed, especially for mink, was surveyed. Herring was ensiled with sulphuric, hydrochloric or formic acid as main additive, with formic, acetic, sorbic or citric acid and the **antioxidant** Ethoxyquin. There was little damage by bacteria or fungus. From peroxide value and I number, fat did not oxidise provided that only fresh raw material was used and that at least 150 X 10-6

**antioxidant** was added at the start. For longer than the 3 months of the present trial, more **antioxidant** would be needed. From changes in pH, silage made with sulphuric acid 2.5, acetic acid 1 and **antioxidant** 0.15% either should have had more sulphuric acid or 0.1 to 0.2% sorbic acid or other fungus inhibitor should have been added. It gave satisfactory growth of mink. Silage made with formic acid gave poor growth, probably because the proportion of acid used caused the feed to smell of it. To avoid refusal of feed, it would be better to use 15 to 20% silage in feed, rather than the 25% that was used. Conditions for good silage were absolutely fresh raw material, rapid preparation, effective mixing of additives, clean equipment and, if necessary, covering the silage with CO2 in the silo. That avoids surface rancidity and the risk of accelerated antioxidation or stirring or tapping.

L2 ANSWER 27 OF 28 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1975:546002 CAPLUS
DN 83:146002
TI Production and use of **fish silage** for mink
AU Jensen, Preben Moeller; Joergensen, Gunnar
CS Den.
SO Beretning fra Statens Husdyrbrugsforsoeg (1975), 427, 79 pp.
CODEN: BSHUDX; ISSN: 0105-6883
DT Journal
LA Danish
AB Herring silage for mink feed was well preserved from bacterial and fungal growth by adding HCl [7647-01-0], H2SO4 [7664-93-9], and HCO2H [64-18-6]. Fat rancidity could be avoided only by using abs. fresh herring material at the start, and then adding Ethoxyquin [91-53-2] at 150 ppm at the outset, and adding more after 3 months' storage. A problem with HCO2H was that it tended to make the feed unpalatable to the animals. A combination of H2SO4 at 2.5% plus HOAc [64-19-7] at 1% plus **antioxidant** at 0.15% was not quite adequate for good preservation and should be bolstered by more H2SO4 or by sorbic acid [110-44-1] at 0.1-0.2%.

L2 ANSWER 28 OF 28 NTIS COPYRIGHT 2003 NTIS on STN
AN 1991(13):07216 NTIS Order Number: MIC-90-01481/XAB
TI Feeding trials with concentrated **fish silage** for fox and mink. Canadian translation of fisheries and aquatic sciences no. 5348.
Feeding trials with concentrated **fish silage** for fox and mink--Translation.
AU Skrede, A.
CS Canada Inst. for Scientific and Technical Information, Ottawa (Ontario). (062652000)
NR MIC-90-01481/XAB
11p; c1988
DT Report
CY Canada
LA English
NTE Translated from Norwegian. Originally published in Norwegian.
AV Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.
NTIS Prices: PC E07/MF E01
OS GRA&I9103
AB A new method was developed for manufacturing **fish silage** which consists of preserving the raw material with 1.3%-1.8% formic acid and ethoxyquin as an **antioxidant**, followed by further processing which includes concentration to about 55% dry matter and adjustment of the fat content to the desired level. The silage is also subjected to a heat treatment which destroys enzymes such as thiaminase. Trials were conducted in 1985 and 1986 with 4 batches of concentrated **fish silage**. This report discusses

results from the first 3 batches, with the 4th trial carried out in the fall. Batches were analysed and tested for digestibility.

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=> d his

     (FILE 'HOME' ENTERED AT 12:43:33 ON 09 SEP 2003)

     FILE 'CAPLUS' ENTERED AT 12:43:42 ON 09 SEP 2003
                E NO155273/PN
                E DK141922/PN
L1             1 S E3
L2             2 S SILAGE AND (BHA OR BHT OR TBHQ)
L3             2 S SILAG### AND (BHT OR BHA OR TBHQ)

=> file food
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                    30.40      30.61

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                       ENTRY    SESSION
CA SUBSCRIBER PRICE                                    -2.60      -2.60

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FILE 'NUTRACEUT' ENTERED AT 12:47:49 ON 09 SEP 2003


FILE 'SCISEARCH' ENTERED AT 12:47:49 ON 09 SEP 2003


FILE 'TOXCENTER' ENTERED AT 12:47:49 ON 09 SEP 2003


=> S SILAG### AND (BHT OR BHA OR TBHQ)
L4 6 SILAG### AND (BHT OR BHA OR TBHQ)

=> dup rem l4
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L5 5 DUP REM L4 (1 DUPLICATE REMOVED)

=> d 1-5 bib ab

L5 ANSWER 1 OF 5 PROMT COPYRIGHT 2003 Gale Group on STN

AN 2001:244210 PROMT
TI Trade name directory.(Brief Article)
SO Modern Plastics, (15 Feb 2001) pp. F-229.
ISSN: 0026-8275.
PB Chemical Week Associates
DT Newsletter
LA English
WC 29896
*FULL TEXT IS AVAILABLE IN THE ALL FORMAT*
AB A
THIS IS THE FULL TEXT: COPYRIGHT 2001 Chemical Week Associates

Subscription: $41.75 per year. Published monthly.

L5 ANSWER 2 OF 5 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN 1987:378746 BIOSIS
DN BA84:65243
TI USE OF WASTE GROWN TILAPIA **SILAGE** AS FEED FOR CLARIAS-BATRACHUS L.
AU WEE K L; KERDCHUEN N; EDWARDS P
CS DIV. AGRIC. AND FOOD ENG., ASIAN INST. TECHNOL., P.O. BOX 2754, BANGKOK, THAILAND.
SO J AQUACULT TROP, (1986 (RECD 1987)) 1 (2), 127-138.
CODEN: JATRED.
FS BA; OLD
LA English
AB A preliminary experiment to determine the feasibility of using waste grown tilapia (Oreochromis niloticus L.) **silage** as feed for the walking catfish (Clarias batrachus L.) is described. Tilapia **silages** prepared by addition of acid or by bacterial fermentation with and without the antioxidant, butylated hydroxytoluene (**BHT**), were stored for 12 weeks and their nutitional and storage characteristics studied. The proximate composition of the **silages** did not change with storage. **Silages** were incorporated with a basal mixture to formulate feeds containing 30% crude protein which were

fed to walking catfish. A commercial pellet was used as a control. There were no significant ($P < 0.05$) differences in daily weight gain, percentage weight gain, specific growth rate and food conversion ratio of fish fed any of the diets. The acceptability of tilapia **silage** as an ingredient in catfish feed as shown in this study presents an alternative to fish meal in utilizing fish waste, trash fish or low value fish.

L5 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 1
AN 1986:128610 CAPLUS
DN 104:128610
TI **Silage** from tropical fish. 3. Lipid behavior
AU Hall, G. M.; Ledward, D. A.
CS Dep. Appl. Biochem. Food Sci., Sch. Agric., Sutton Bonington/Leics., LE12 5RD, UK
SO Journal of Food Technology (1986), 21(1), 45-54
CODEN: JFOTAP; ISSN: 0022-1163
DT Journal
LA English
AB Acid **silages** were prepd. from silverbelly (Leiognathus) at 30.degree. with 3% of 98% $HCO_2H$. Lipid oxidn. takes place actively during ensiling as demonstrated by changes in fatty acid compn., thiobarbituric acid value and peroxide value. Lipid extn., with $CHCl_3$-MeOH or iso-PrOH, or the addn. of an antioxidant before ensiling can limit the build up of lipid oxidn. products. Lipid extn. also suppresses the autolysis of proteins in a defatted **silage** compared with a normal **silage** when measured by total sol. N or sol. nonprotein N. The solubilization of collagen appears to be unaffected by lipid extn. perhaps reflecting the nonenzymic nature of this process. The limited autolysis in defatted **silages** may be beneficial in restricting the release of free amino acids capable of reacting with lipid oxidn. products resulting in a lower nutritional value for **silage** based diets.

L5 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1967:27859 CAPLUS
DN 66:27859
TI Food preservative comprising enzymes and antioxidants
IN Tribble, Talmadge B.; Rondenet, Eugene L.
PA Flavor Corp. of America
SO U.S., 5 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI US 3284212 | | 19661108 | US 19630306 | |

AB The combined use of carbohydrases and antioxidants was more effective than the use of either alone, in maintaining the quality of raw stored foods. Thus, alfalfa **silage** dusted at 15 g./ton with a mixt. of diastase 6, cellulase 1, ethoxyquin 3, **BHT** 3, and citric acid 2 parts by wt., retained natural color, better odor, higher .beta.-carotene, and higher carbohydrate content. Similar examples are given for hay and corn meal.

L5 ANSWER 5 OF 5 FEDRIP COPYRIGHT 2003 NTIS on STN
AN 2003:106196 FEDRIP
NR AGRIC 0152398
TI ANTIOXIDANT PROPERTIES OF FLAVONOIDS AND PHOSPHOLIPIDS IN FISH OIL MODELS AND MIXED FOOD SYSTEMS
SF Boyd, L. C.
CSP NORTH CAROLINA STATE UNIV, FOOD SCIENCE, RALEIGH, NORTH CAROLINA, 27695
FU HATCH |c H
FS Department of Agriculture

SUM Determine the antioxidant properties of selected classes of phospholipids, flavonoids of evening primrose seed oil, and the degree of synergism existing between these two classes of compounds in model oil systems and mixed food systems. Examine the biological properties of evening primrose flavonoids in comparison to selected flavonoids contained in soybeans using in vitro oxidation model and an antihemolytic model. The flavonoids contained in evening primrose seeds will be isolated, characterized, and their antioxidant properties determined in a fish oil model system with comparison made to a commercial phenolic antioxidants. Additional model systems will examine the synergism existing between flavonoids and selected phospholipids. Solvent extraction will be used to isolate phenolic compounds, followed by HPLC separation of total phenols with confirmation of identity by gas liquid chromatography/mass spectrometry with comparison to reference standards of flavonoids. Antioxidant properties will be determined by resistance oil model systems to oxidation using the Rancimat (induction time) and GC analyses of selected headspace volatiles; in vitro oxidation of linoleic acid in presence of lipoxygenase and flavonoids; and antihemolyzing ability of flavonoids in washed red blood cells containing hydrogen peroxide.PR properties of plant phospholipids (PL) in conjunction with other plant polyphenols contained in selected material such as evening primrose and to compare the activity using fish oil model systems as well as other highly oxidizable oils. In the final phase of this project, two subprojects were completed. The first involved the effects of tocopherols on lipid oxidation in a test oil model system. Results from these experiments using stripped corn oil and soy bean oils showed that the presence of tocopherols provided little protection to phytosterols or fatty acids. In the second experiment, the antioxidant properties of an evening primrose seed extract (SE) were compared to a commercially extracted filter cake (FC), and to butylated hydroxytoluene (**BHT**) in a bulk oil system and in a water-oil emulsion system. The SE was more effective than the FC in controlling oxidation in both systems whereas both extracts exhibited a concentration dependent increase in antioxidant activity. At higher concentrations, the SE was as effective as **BHT** and appeared to act in synergism when the two antioxidants were added together.PB ethoxyquin on the quality of ground poultry mortality carcasses preserved by lactic acid fermentation and phosphoric acid stabilization. Poultry Sci 80. 8:1154-1163.PB of co-extruded poultry **silage** and culled jewel sweet potatoes as a feed ingredient for hydrid Tilapia (Oreochromis niloticus x O-mossambicus. Aquaculture 198. 3-4:269-280.PB lipid in diabetes type 11 in African American & Caucasians. FASEB J 15. 4:A201-A201 Part 1.PB Effects of Processing on the Antioxidant Activity of Muscadine Juices and wines. (Abstract). Anaheim, CA No 30G-32, P76.PB 2002, Effects of Processing on Antioxidant Retention of Selected Cultivars of Blueberries and their Products. (Abstract) Institute of Nutrition, Chapel Hill, NC. Pg 10-11.CA

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=> d bib ab

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1981:45864 CAPLUS
DN 94:45864
TI Extracting oil and protein material from fish or fish entrails or livers
IN Joensen, Jon Olavur
PA Matcon Raadgivende Ingenioerfirmá APS, Den.
SO Dan., 10 pp.
CODEN: DAXXAF
DT Patent
LA Danish
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | DK 141922 | B | 19800721 | DK 1978-4776 | 19781026 <-- |
| | DK 7804776 | A | 19800427 | | |
| | DK 141922 | C | 19801201 | | |
| PRAI | DK 1978-4776 | | 19781026 | | |

AB Fish intestines and livers are ground, mixed with preferably $H_2SO_4$ to a pH of 1.2-2.2, an antioxidant is added (BHA and BHT), the mixt. is maintained at 40.degree. for 1-4 days, neutralized with $Ca(OH)_2$ to a pH of 3.5-5, heated to 85-100.degree. to denature intestinal enzymes that had hydrolyzed the proteins, and centrifuged to obtain 3 fractions: fats, a protein hydrolyzate, and a sludge contg. $CaSO_4$, undigested tissue, and Ca salts of free fatty acids, and other insol. materials. The fats could be sold as liver oil or marine oils, and the protein hydrolyzate can be fed to animals without imparting a fishy taste to meat or milk. Thus, 100 kg of finely ground intestines and livers of cod is treated with 3 kg of concd. $H_2SO_4$ and 1 g of butylhydroxyanisole to produce a pH of 1.5 and stored in an ensilage tank on the ship until it reaches the harbor where it is pumped into a tank on shore and warmed to 40.degree. (pH about 1.7). After 2 days at 40.degree., the ensiled material is treated with $Ca(OH)_2$ to produce a pH of about 4.3, heated to 95.degree., and centrifuged to yield 23 kg oil, 75 kg protein hydrolyzate soln. contg. 11.6 kg protein hydrolyzate and 60 g of oil (about 0.5%). The sludge, 6 kg, contained about 4% oil, and is mixed with the protein hydrolyzate soln. and used as fodder.

L4 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1954:12498 CAPLUS
DN 48:12498
OREF 48:2283a-b
TI Effect of antioxidant addition to **fish waste** on folic acid and crude protein content
AU Hastings, W. H.
SO Southern Fisherman (1953), 13(No. 10), 114
CODEN: SFISAN; ISSN: 0096-8447
DT Journal
LA Unavailable
AB A soln. of propyl **gallate** and butylated. hydroxyanisole in propylene glycol at a level supplying the product with an active antioxidant content of 0.1% was added to fish or fish-base rations prior to their being dried. With true cod, folic acid loss was reduced as much as 25% and protein loss as much as 1.4%.

L4 ANSWER 9 OF 13 FEDRIP COPYRIGHT 2003 NTIS on STN
AN 2003:110572 FEDRIP
NR AGRIC 0172059
TI ENHANCEMENT OF THE QUALITY OF GA AGRIC. COMMODITIES THROUGH IMPROVEMENTS IN PROCESSING PARAMETERS
SF Koehler, P. E.
CSP UNIVERSITY OF GEORGIA, FOOD SCIENCE AND TECHNOLOGY, ATHENS, GEORGIA, 30602
FU HATCH |c H
FS Department of Agriculture
SUM The goal of this project is to enable Georgia food processors to provide consumers with the highest quality peanut, poultry and vegetable products possible to strengthen their competitive position in the marketplace. To this end, the specific objectives are: 1) to utilize sound Vidalia onions unsuited for fresh market sales in value-added pre-cut, packaged products, 2) to increase the stability of dried egg yolk color through manipulation of the stability of the carotenoids in the yolks and through changes in processing parameters, 3) to utilize **wastes** from Georgia seafood processing plants as useful components of layer feed, 4) to extend the shelf-life and improve quality of higher moisture processed peanut products and 5) to characterize the **tocopherol** content of peanut cultivars produced in Georgia and in breeding lines in an effort to improve storage life/quality. Vidalia onions packaged in bags with different gas transmission rates and storedat different temperatures will be evaluated for package gas levels (GLC), texture (LEE-Kramer shear press on Instron), color (Hunter L,a,b, with Minolta CR-300 color meter), total solids, soluble sugars, and pungency (by published chemical methods). Egg yolk color will be monitored at each step in an actual drying plant to determine parameters to minimize color loss. Color will be determined as beta-carotene, as NEPA values, and as L,a,b colorimeter values. Effect of dietary supplementation with seafood plant processing **wastes** on yolk color will be similarly determined. Textural properties of peanut butter spreads made from partially defatted peanuts in which the peanut oil has been replaced by sucrose polyester fat substitute will be evaluated by textural profile analysis. Surface response methodology (mixture design) will be used to find formulations that duplicate the adhesiveness, cohesiveness, hardness, etc. of commercial peanut butter. Fatty acid composition and **tocopherol** content of peanut breeding lines will be studied using GLC and HPLC analyses. Losses in peanut flavor components in higher moisture content food systems will be examined by GLC analyses of flavor volatiles.PR 22-25 C. and pH 5-6. Astaxanthin and carotene production maximized after 6 days. Low aeration produced mainly beta-carotene. Pigments retained within the dried yeast cells were more stable. Anti-oxidants improved stability of extracted pigments. Roasted peanuts placed into higher moisture systems absorb moisture causing changes in sensory, physical, and chemical attributes of the product. Moisture, temperature, and storage all affected the sensory attributes. At

all temperatures and storage times, peanut butter products with 5% added water had lower roasted aroma and less roasted flavor than 2.5% or 0% water-added samples as well as more off-odors and off-flavors. Samples containing 5.0% water had stiff texture. The peanut butter darkened as more water was added. Color darkening due to moisture could be detrimental in roasted peanut products unless accounted for in initial prototype development. Defatted peanuts were considerably lighter in appearance. Five volatile compounds(1-methylpyrolle, 2-methylpyrazine, 2,5-dimethylpyrazine, ethanol, hexanol, and pyridine decreased during storage. Defatting also resulted in roasted peanutty sensory scores which decreased over time. Rancidity related attributes were more intense in defatted samples and increased during storage. Peroxide value and TBA values were higher in defatted peanuts and increased during storage. Effects of temperature, oxygen transmission rate (OTR),and storage on quality changes in film-packaged fresh-cut pungent and Vidalia sweet onions were studied. Pungent onions darkened to a greater extent and at a more rapid rate than sweet onions at all storage temperatures regardless of the oxygen permeability of the package. Total sugar concentrations were initially much higher in the Vidalia onions. In both pungent and sweet onions, total sugars declined with both temperature and storage time. However, the rate of decrease in total sugars was much greater in the Vidalia onions except for storage at 2C in the highest OTR bags where sugar concentration in the Vidalia onions remained high. Texture was little effected in either type of onion. Sensory testing by trained panelists indicated that the "sweetness" character of Vidalia onions in all package types decreased significantly as storage time and temperatures increased. Pungent onions exhibited little or no change in the "sweetness" character except in the lowest OTR package at 2C where sweetness increased somewhat. At the lowest (2C) temperature, the "pungency" of the Vidalia onions remained unchanged during the entire storage period regardless of the OTR of the package. However, at 6C the pungency of Vidalia onions increased significantly during storage in all three types of packaging. The "pungency" of the pungent onions decreased as storage time increased at the low (2C) temperature. The extent of the decrease in pungency increased as the OTR of the packaging decreased. Pyruvate concentrations, which have been used as a chemical measure of pungency, decreased during storage of pungent onions while increasing in Vidalia onions.PB M.S.Thesis. University of Georgia, Athens, GA 30602.PB and pungent onion during film package storage. M.S. Thesis. University of Georgia, Athens, GA 30602.PB polyester synthesis using response surface methodology. J. Food Sci. 61(1): 97-100.PB autoxidation of defatted peanuts. J. Food Sci. 61(1): 113-115.PB fouling and molecular weight cutoff effects on the paritioning of pectinesterase. J. Agr. Food Chem. 44: 2091-2095.PB optimization of sucrose polyester physical properties by mixture response surface methodology. J. Amer. Oil Chem. Soc. 3:(4)455-460.PB thermostable pectinesterases in citrus juices. J. Food Science 61(2): 379-382PB Peanut Spread Containing Sucrose Polyester. J. Food Sci. 61:(6) 1227-1229.PB Sensory Characteristics of Defatted Roasted Peanuts During Storage. J. Peanut Sci. 26: 44-53.PB activity peanut butter product. J. Food Quality 20:(5) 145-156.CA

L4 ANSWER 10 OF 13 FROSTI COPYRIGHT 2003 LFRA on STN
AN 255601 FROSTI
TI Mercury consumption and toxicity with reference to fish and fish meal.
AU Johnston J.N.; Savage G.P.
SO Nutrition Abstracts and Reviews Series A, 1991, 61 (2), 73-116 (many ref.)
DT Journal
LA English
AB This extensive review article covers methylmercury poisoning in man, worldwide interest in mercury compounds, mercury in New Zealand, analytical methods, accumulation of mercury by fish, establishing an ADI for mercury, compounds modifying the toxicity of mercury, functions of mercury in the body, mercury in fish meal and **fish**

**silage** and safety of fish protein concentrate for human consumption.

L4 ANSWER 11 OF 13 FSTA COPYRIGHT 2003 IFIS on STN
AN 1995(11):N0059 FSTA
TI Production fish oil from industrial **wastes** by hydrolysis.
AU Liu, Y.; Pigott, G. M.
CS IFT Annual Meeting 1995; Dep. of Food Sci. & Tech., Univ. of Washington, Seattle, WA 98195, USA
SO (1995), p. 179
DT Conference
LA English
AB A hydrolysis process was developed to separate fish oil from primary **fish wastes** (head, viscera, trim and tail) from fresh cultured King salmon and Atlantic salmon minced and mixed in various ratios, with or without **TBHQ**. Experimental parameters were ratios (head + viscera:tail + trim) of 0:100-100:0, pH 2-8, temp. 28-48.degree.C, time 2-12 h. Following hydrolysis, oil was centrifugally separated and analysed for TBA value and free fatty acid contents. To produce high quality oil, lower proportions of head + viscera and inclusion of **TBHQ**, along with pH 5, 32-36.degree.C and a 10 h exposure gave best results. [Further abstracts from this Meeting can be traced via the FSTA author index, under IFT Annual Meeting 1995. See FSTA (1995) 27 10A6. From En summ.]

L4 ANSWER 12 OF 13 PASCAL COPYRIGHT 2003 INIST-CNRS. ALL RIGHTS RESERVED. on STN
AN 2002-0565444 PASCAL
CP Copyright .COPYRGT. 2002 INIST-CNRS. All rights reserved.
TIEN Sensory quality of marinated frozen stored chicken thighs as affected by dietary fish fat and vitamin E
TIFR Qualite sensorielle de cuisses de poulet marinees entreposees congelees influencee par la matiere grasse de poisson et la vitamine E du regime alimentaire des poulets
AU MIELNIK Maria B.; HERSTAD Olav; LEA Per; NORDAL John; NILSSON Astrid
CS MATFORSK Norwegian Food Research Institute, Osloveien 1, 1430 Aas, Norway; Department of Animal Science, Agricultural University of Norway, 1432 Aas, Norway; Prior Norge, Torshov, 0402 Oslo, Norway
SO International journal of food science & technology, (2002), 37(1), 29-39, 5 tabl., 30 refs.
ISSN: 0950-5423 CODEN: IJFTEZ
DT Journal
BL Analytic
CY United Kingdom
LA English
AV INIST-13345, 354000104373000040
AB The effects of diets containing fish meal (0 or 4%). **fish silage** (0 or 4%) and vitamin E (60 or 200 mg kg.sup.-.sup.1) and the processing effect of marinating with sodium citrate (0.24 or 0.48%) or ascorbate (0.31 or 0.62%) have been studied to test the hypothesis that oxidative stability of frozen stored chicken thighs can be improved by such treatments. A trained sensory panel assessed the samples after storage at 25 .degre.C for I week, 3 and 6 months. Feed with 4% fish meal resulted in increased fish flavour and odour of the thighs while 4% **fish silage** had a smaller effect on these attributes.
Fish meal and **fish silage** added together into the feed by an amount of 4% each, caused strong fish flavour and odour in the product and accelerated the rancidity process. High concentration of vitamin E (200 mg kg.sup.1) in the feed reduced rancidity when 4% fish products had been added to the feed, but no effect was noted when 4% fish meal plus 4% **fish silage** had been added together.
High concentration of ascorbate in the brine (0.62%) decreased sensory score for rancidity attributes (hay, grass, soap and paint), while high concentration of citrate (0.48%) increased these parameters in frozen

stored chicken thighs.

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TI ATLANTIC DOGFISH **SILAGE** VS HERRING **SILAGE** IN DIETS FOR ATLANTIC SALMON (SALMO-SALAR) - GROWTH AND SENSORY EVALUATION OF FILLETS
AU HERAS H; MCLEOD C A; ACKMAN R G (Reprint)
CS TECH UNIV NOVA SCOTIA, CANADIAN INST FISHERIES TECHNOL, POB 1000, HALIFAX B3J 2X4, NS, CANADA (Reprint); TECH UNIV NOVA SCOTIA, CANADIAN INST FISHERIES TECHNOL, POB 1000, HALIFAX B3J 2X4, NS, CANADA
CYA CANADA
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LA ENGLISH
REC Reference Count: 41
*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*
AB The preparation of **silage**-based diets from dogfish **waste** suitable for Atlantic salmon was studied because of a concern that the urea in the dogfish would affect either diet acceptability by salmon and/or consumer-sensory evaluation of the salmon muscle. The dogfish liver was not included in the **waste** utilized. The protein content of dogfish **silage** was adequate (approximately 14.9%, Kjeldahl nitrogen corrected for urea nitrogen). The fat in dogfish **silage** included triglycerides at approximately 81% of total lipid. The high level of polyunsaturated fatty acids (approximately 28% of total fatty acids) in this lipid was comparable to that of other fish lipids employed in salmonid diets. Two sets of experiments were conducted with Atlantic salmon to evaluate the suitability of dogfish-**silage**-based diets. In both, three moist diets based on ground herring (control), on herring **silage**, and on dogfish **silage** were tested for 9 weeks. The studies were conducted in two phases based on salmon averaging respectively 190 or 490 g. These were fed twice daily to apparent satiation (water temperature range 5-14-degrees-C, 12 h photoperiod). Although the urea content was nearly 0.5% in the dogfish **silage** diet, there was no apparent decrease in palatability for salmon in the experiment with larger fish. However, there was a decrease in the palatability of both herring and dogfish **silage** diets fed to the smaller fish, probably due to their being stored for 8 weeks at room temperature prior to diet formulation. The addition of natural **tocopherols** in the preparation of **silage** for the larger fish kept the lipid oxidation levels acceptable (peroxide value < 5 mEq/kg) for the 15 days of storage before making the diets. In the second study with larger fish, there were no significant differences among the diets in weight gain, feed efficiency, and protein efficiency ratio. These parameters had been significantly higher in the smaller fish fed the ground herring control diet. A sensory evaluation was conducted with the salmon fillets from both studies where the fish fed on different diets were compared. No significant differences were detected in either experiment. The lipid, protein and n-3 fatty acid levels of the muscle of the larger salmon fed the three different diets did not exhibit any significant differences (P > 0.05). Our results show that dogfish offal, an environmental **waste** problem, can be made into a **fish silage** acceptable for salmon farming if proper storage conditions are employed.

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